

**INDUSTRIAL DEVELOPMENT IN UTTARAKHAND:
A MICRO LEVEL ANALYSIS**



G.S. Mehta

**GIRI INSTITUTE OF DEVELOPMENT STUDIES
Sector 'O' Aliganj Housing Scheme
LUCKNOW 226 024**

1998

INDUSTRIAL DEVELOPMENT IN UTTARAKHAND : A MICRO LEVEL ANALYSIS

G.S. Mehta

INTRODUCTION

Balance regional development and more specifically development of backward areas, has been and will continue to be a major plank of economic policy in the country. While agricultural development as such can serve as an effective instrument in fulfilling these objectives to a certain extent, the theoretical as well as empirical evidence suggests that infusion of non-agricultural activities, particularly manufacturing, becomes essential for the uplift of the conditions in the underdeveloped areas. The reason probably lie in the limit that the nature puts on the development of agriculture as such, the inevitable dependence of agriculture for its inputs and markets on the non-agricultural activities, and relatively larger linkage potential of manufacturing than of agricultural activities. It is with this belief that manufacturing activity is expected to play a major role in balanced regional development and development of backward areas.

There are relatively well developed and highly developed regions across the country; but even within the various regions of the country, which can be identified with the states, there are extreme disparities in the levels of

development. In a large state like Uttar Pradesh such disparities are indeed striking, not only between different regions, but also between different districts in individual regions, sub-regions and different locations of the same district. It has been observed that, to a large extent, the manufacturing activity and level of development have gone together, although industrially better placed areas/regions are also generally, agriculturally better developed. On the whole employment opportunities have been consistently increasing in the industrially more developed states and regions; indicating the fact that planning for industrial development can significantly widen the employment opportunity to a great extent.

The Uttarakhand, a hilly region of Uttar Pradesh, is among the most backward regions of India. The geographical area of Uttarakhand is 51.12 thousand sq. kms. and the population, as per 1991 census is 5.93 millions. The economy of the region is predominantly based on agriculture which have limited potential for growth due to several physical, geographical and other locational problems imposed by nature on its development. Yet, dependence of the local population on agriculture, both for livelihood and employment, has been almost total and is in fact increasing over the years due to the non-availability of alternative employment and income opportunities. The main occupation of a majority of workers (65 per cent) is agriculture and about 92 per cent of the population is dependent on it for their livelihood.

In the region, cultivated land is limited as out of total reported land area of 5358.8 thousand hectares the net sown area is only about 12.5 per cent. Per capita cultivated land is only 1.12 hectares and it has in fact, shown a declining trend over the years. Agricultural land, except in Tarai and Valley areas, is mostly unfertile. Small holdings upto 2 hectares account for 87.7 per cent. Only about 34 per cent of cultivated land is irrigated, most of which is in the plain part of Nainital, Dehradun and Udham Singh Nagar districts. In the hilly districts, irrigated area ranges from 5.5 per cent in Chamoli to 15.3 per cent in Uttar Kashi.

The average yield rates of foodgrains per hectare of land had been remaining much less than the state average and there has been no significant improvements in the productivity of major crops in the region. The low level of irrigation facility, lack of improvements in the technology as suited to terraced farming and unsuitability of land for the use of modern fertilizers and chemicals and fertilizers have been the major factors behind the slow increase in crop-productivity. Augmenting water resources and bringing additional land area under the facility of irrigation is much difficult in the presently emerging situation of increasing deforestation. The water available from the natural springs and rains has been the main source for irrigation of land in the region. However, in less than 50 per cent villages the springs have either used to yield water or sprout water only during rainy season, when already sufficient rain or surface

water is available. Decrease in spring discharge ranging from 25 per cent to 75 per cent and resulting in the spring-fed rivers have gone down considerably - 30 to 40 per cent in the last decade (Valdia, 1996). Indeed most of the lesser Himalayan rivers and streams are afflicted with too little too much water syndrome. The small size of land holdings available with the farmers has also impeded the growth of agricultural productivity and yield rates, as such holdings are not suitable for the introduction of improved farm practices.

In such a situation of topographical problems, unsuitability of land for using improved farm practices and problems existing in providing irrigation facility the possibility of increasing agricultural productivity so as to create additional gainful employment opportunities according to the increasing trend of labourforce has been realised a rather difficult task in the region. In this regard, promotion of industrialisation by planning for a comprehensive development approach based on keeping in view firstly, the available area specific comparative advantages of the region in terms of developing certain specialised industrial groups and secondly, identification of such industrial groups for expansion and development which development will produce minimum adverse impact on the local environmental and ecological system would be an instrumental measures to overcome from such existing problems. However, it must be considered that the development of industrial sector

in the region would not be possible in highly diversified manner and at large scale because the region is dominated by very sensitive and fragile eco-system. An integrated planning for development of industrialisation should be broadly based on the expansion of small scale pollution free units and using the locally available resources; both natural resources as well as human resources, including locally developed indigenous technology instead of the establishment of large units which may adversely affect the mountain eco-system with increasing pollution. In fact, the expansion of certain large industrial units which are involved in the production of electronic and electrical commodities have been recognised well suitable in the local environmental situation of the Uttarakhand during the recent past.

CONTRIBUTION OF INDUSTRIAL SECTOR IN THE ECONOMY

The economy of the region has experienced a growth rate of only 2.4 per cent per annum as against 4.1 per cent for Himachal Pradesh and 4.3 per cent for Uttar Pradesh as a whole. Per capita domestic output of Uttarakhand declined from Rs.1304 in 1984-85 to Rs.1014 in 1991-92. Accounting only for commodity producing sectors, agriculture including animal husbandry and fishing contributes significantly highest amounts of earnings of 67 per cent followed by manufacturing activities 20.80 per cent, forestry and logging 8.78 per cent and remaining 4.2 per cent mining and quarrying in the net domestic output of Uttarakhand. During 1987-88 to

Table 1 : District-wise Net Domestic Output from Commodity Producing Sectors
(at 1980-81 prices)

Commodity Producing Sectors	Almora	Pithoragarh	Tehri	Uttar-Chamoli	Dehra-Kashi	Garh-dun	Naini-wal	Uttara-tal	Khand
1987-88									
Agriculture, Animal Husbandry and Fishing	383.7 (76.83)	404.4 (82.70)	253.4 (82.89)	134.1 (54.58)	170.9 (69.25)	312.1 (59.97)	245.7 (63.41)	1545.3 (59.55)	3448.6 (64.49)
Forestry and Logging	48.8 (9.77)	46.3 (9.47)	30.6 (10.01)	99.4 (40.46)	40.6 (16.45)	72.5 (12.54)	95.7 (24.70)	327.1 (12.60)	761.0 (14.23)
Mining and Quarrying	7.6 (1.53)	2.2 (0.45)	5.3 (1.73)	3.6 (1.47)	0.9 (0.36)	59.2 (10.24)	3.4 (0.88)	28.5 (1.10)	110.7 (2.07)
Manufacturing (Regd.)	19.2 (3.84)	2.4 (0.49)	4.0 (1.31)	-	-	104.3 (18.04)	19.8 (5.11)	633.2 (24.40)	782.9 (14.64)
Manufacturing (Non-Regd.)	40.1 (8.03)	33.7 (6.89)	12.4 (4.06)	2.6 (3.50)	34.4 (13.92)	30.2 (5.22)	22.9 (5.91)	62.0 (2.39)	244.3 (4.57)
All Sectors	499.4 (100.0)	489.0 (100.0)	305.7 (100.0)	245.7 (100.0)	246.8 (100.0)	578.3 (100.0)	387.5 (100.0)	2595.1 (100.0)	5347.5 (100.0)
1990-91									
Agriculture, Animal Husbandry and Fishing	476.1 (79.05)	462.5 (83.06)	364.4 (85.08)	178.6 (71.16)	212.3 (73.38)	366.6 (55.44)	319.4 (74.03)	1506.1 (56.97)	3887.0 (66.27)
Forestry and Logging	47.3 (7.85)	47.3 (8.49)	36.5 (8.52)	61.4 (24.46)	34.9 (12.06)	50.5 (7.64)	54.6 (12.66)	232.2 (8.78)	564.7 (9.63)
Mining and Quarrying	8.2 (1.36)	3.8 (0.68)	7.8 (1.82)	0.7 (0.28)	0.9 (0.31)	84.6 (12.79)	6.6 (1.53)	81.5 (3.08)	194.1 (3.31)
Manufacturing (Regd.)	22.7 (3.77)	2.9 (0.52)	4.7 (1.10)	-	-	123.6 (18.69)	23.5 (5.45)	750.3 (28.36)	927.7 (15.82)
Manufacturing (Non-Regd.)	48.0 (7.96)	40.3 (7.24)	14.9 (3.48)	10.3 (4.10)	41.2 (14.24)	36.0 (5.44)	27.3 (6.33)	74.1 (2.80)	292.1 (4.98)
All Sectors	602.3 (100.0)	556.8 (100.0)	428.3 (100.0)	251.0 (100.0)	289.3 (100.0)	661.3 (100.0)	431.4 (100.0)	2645.2 (100.0)	5865.6 (100.0)

Source : District Domestic Output, U.P., Economics and Statistics Division, State Planning Institute, Lucknow, 1995.

1991-92 the per capita net domestic output has grown at the rate of only 0.98 per cent. Annual growth rate of NDP was significantly highest for mining and quarrying (25.94 per cent) as compared to remaining economic sectors; it was 3.50 per cent for agriculture including animal husbandry and 10.39 per cent for manufacturing sector. Across the districts the agriculture sector is noted as a dominating economic activity among various productive economic sectors contributing highest amount of income for all the districts ranging from 85 per cent in Tehri Garhwal to 55 per cent in Dehradun. However, the growth of NDP generated from agriculture sector has been marginally increased in most of the districts, in fact in districts Dehradun and Nainital it has indicated a declining trend.

The contribution of manufacturing activities, both household and non-household industries, in the total net domestic output of the region has increased marginally from 19.21 per cent in 1987-88 to 20.80 per cent in 1990-91. However, the value of NDP earned from non-household manufacturing sector is around four-folds higher than NDP earned from household manufacturing sector, obviously due to the nature of larger amount of per unit capital investment and larger quantum of production involved in former categories of manufacturing activities than the latter one. Across the different district the share of non-household industries is remarkably much higher for Nainital (18.69 per cent) followed by Dehradun (18.04 per cent) because of the

concentration of larger industrial units in these two districts. However, the contribution of household manufacturing activities in NDP is found significantly at highest level in district Chamoli (14.24 per cent) followed by Almora (7.96 per cent) and Pithoragarh (7.24 per cent). It may be mentioned that the share of khadi and its related activities is highest at 45 per cent in the total existing household manufacturing activities in the region. These units are mainly concentrated in higher altitude mountain areas of Almora, Chamoli and Pithoragarh districts and generating larger amount of incomes than the other household manufacturing units in these districts.

In terms of the absorption of labourforce the contribution of manufacturing sector has not been very much appreciable during the past. In fact negative performance has been observed in terms of providing employment opportunities of manufacturing sector during 1981 and 1991. The concentration of workforce has been at large scale in agriculture sector for the last several decades but it has been consistently declined from 69.31 per cent in 1981 to 64.53 per cent in 1991. The shift of workforce from agricultural and manufacturing activities has been to tertiary sector. The share of workers in tertiary sector has increased from 29.20 per cent to 34.61 per cent during last decade. The growth of workers in tertiary sector has also been significantly much higher (45.96 per cent) as compared to agricultural sector (14.62 per cent), while it has

declined at 28.74 per cent in manufacturing sector. However, the decline in the growth of workers in manufacturing sectors has been due to the decrease in absolute numbers of male workers, otherwise the actual number of women workers has increased from 4.2 thousands to 5.4 thousands, showing a remarkable growth rate of 28.57 per cent during 1981 and 1991.

Table 2 : Distribution of Workers in Different Economic Sectors

(in '000)

Economic Sector	1981			1991			Percentage Change		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Agriculture and allied	668.8 (56.82)	544.3 (94.98)	1213.1 (69.31)	702.09 (49.74)	687.5 (92.70)	1390.4 (64.53)	5.10 -39.73	26.31 28.57	14.62 -28.74
Manufacturing	21.9 (1.86)	4.2 (0.73)	26.1 (1.49)	13.2 (0.93)	5.4 (0.73)	18.6 (0.86)	-39.73 -28.74	28.57 -28.74	14.62 -28.74
Tertiary	486.3 (41.32)	24.6 (4.29)	510.9 (29.20)	697.0 (49.33)	48.7 (6.57)	745.7 (34.61)	43.33 97.97	97.97 45.96	45.96
All Sectors	1177.1 (100.0)	573.1 (100.0)	1750.2 (100.0)	1413.1 (100.0)	741.6 (100.0)	2154.6 (100.0)	20.05 29.40	29.40 23.11	23.11

Note : Figures in brackets indicate the proportion of workers in different economic sectors.

Source : Census of India, U.P. General Population Tables, 1981 and 1991.

The value added per worker in manufacturing sector in Uttarakhand is estimated to be Rs.14120 which is around 13 per cent higher than the state average. Excepting the case of Tehri Garhwal, Uttarkashi and Garhwal the corresponding

figure is worked out to be much higher for all districts than the state level. Across the district, it is significantly highest for district Almora (Rs.32.34 thousand) followed by Pithoragarh (Rs.14.83 thousand) and lowest for Tehri Garhwal (Rs.2.70 thousand). It is also pointed out that value added per worker is registered significantly much higher for districts where household manufacturing activities are mainly concentrated as compared to the districts, such as Nainital and Dehradun, where the large scale industrial units are located. This indicates the fact that household manufacturing activities which are using labour intensive technology are generating significantly larger amount of per worker income than the large industrial units which are using mainly capital intensive technology. Thus looking the favourable comparative advantages of labour intensive technology over the capital intensive technology in the manufacturing activities in terms of their efficiency in generating per worker income it would be desirable that the industrial development in Uttarakhand could be initiated through the expansion of small scale enterprises by providing necessary facilities and incentives required for their growth and development rather to think in terms for the expansion of large industries.

PATTERN OF INDUSTRIAL DEVELOPMENT

In the past, various attempts have been initiated towards the promotion of industrial development in the

region. Uttarakhand has been categorised as industrially backward region, even most of the districts have been defined as zero industry districts such that increasing numbers of incentives in the form of financial assistance which are provided by the Government under the provision of developing industrial sector in industrially backward districts, could be availed. In view of attracting increasing numbers of entrepreneurs for establishing industrial units in Uttarakhand the facility like transport subsidy is also additionally being provided. Increasing emphasis has also been provided to promote the entrepreneurship capability among the local youths by organizing various training programmes for them.

In spite of the availability of various types and varieties of raw material and introduction of several facilities and incentives by the Government for the promotion of different industrial activities, the region has remained industrially backward. Information available on the number, size and product structure is not systematic. There are different sources, censuses, surveys, estimates, and registers of different agencies using different concepts and coverage, and these often overlap. The following broad picture is emerged from the available statistics.

Large Industrial Units

The total number of registered factory units (employing 10 or more workers each) was 441 in the entire Uttarakhand

region, the total number of employees was 37.5 thousands in 1989-90 - the latest year for which data from the Annual Survey of Industries were readily available. There were 177 units in 1979-80, thus showing a growth of two and a half times the number over the decade. Two features of the pattern of these industrial units are worth noting; one, two districts, namely, Nainital and Dehradun, with 265 and 137 units out of the total of 441 in 1989-90, accounted for 91 per cent of the total units. In 1979-80, they accounted for 82 per cent of the units. Both these districts have sizeable parts of their areas in the plains. Therefore, only nine per cent of the large units in Uttarakhand are in purely hilly districts, and, in fact, three districts, Pithoragarh, Chamoli and Uttar Kashi have no industrial units at all. Two, food products are the largest and fastest growing product groups. Thirty-seven per cent of the total units are in this group and their number increased from 25 in 1979-80 to 162 in 1989-90; 143 of them are in Nainital district itself. The next largest group consists of petroleum products and fertilizers; the number of units in this group increased from 11 to 60 over the reference period; but 54 of them are again located in Dehradun and Nainital districts. The third largest group is of non-metallic mineral products, mainly limestone and brick making, again, mostly located in these two districts.

Level of investment in large industrial sector has increased from Rs.92.58 crore to Rs.738.75 crore showing an

Table 3 : Large Scale Industries Registered Under Factory Act

Large Scale Industries	Naini- tal	Almora	Pitho- ragarh	Tehri	Uttar Chamoli	Pauri Kashi	Dehra- dun	Uttara- Khand
1979-80								
Units	48	11	3	4	2	-	12	97
	(27.12)	(6.21)	(1.70)	(2.26)	(1.13)		(6.78)	(54.80)
Investment (Crore Rs.)	34.42	3.62	1.44	0.31	0.03	-	0.38	52.38
	(37.18)	(3.91)	(1.56)	(0.33)	(0.03)		(0.41)	(56.58)
Employment	9695	863	254	55	56	-	214	8853
	(48.50)	(4.32)	(1.27)	(0.28)	(0.28)		(1.07)	(1.48)
Production (Crore Rs.)	43.98	3.03	1.35	0.81	0.09	-	1.42	45.55
	(45.70)	(3.15)	(1.40)	(0.84)	(0.09)		(1.48)	(47.33)
1988-89								
Units	265	12	*	14	-	-	13	137
	(60.09)	(2.72)		(3.17)			(2.95)	(31.07)
Investment (Crore Rs.)	547.19	7.69	*	16.39	-	-	27.48	140.00
	(74.07)	(1.04)		(2.21)			(3.72)	(18.95)
Employment	24395	926	*	592	-	-	676	10868
	(65.13)	(2.47)		(1.58)			(1.80)	(29.01)
Production (Crore Rs.)	664.61	13.04	*	31.29	-	-	10.88	178.79
	(73.96)	(1.45)		(3.48)			(1.21)	(19.90)
Annual Growth Rates								
Units	60.23	1.01	*	5.56	-	-	0.93	4.58
Investment	165.53	12.49	*	92.96	-	-	792.40	18.59
Employment	16.85	0.81		10.18	-	-	23.99	2.53
Production	156.80	36.71		149.85	-	-	74.03	32.50

annual growth rate of 77.55 per cent during 1979-80 to 1988-89. However, the growth of industrial investment is found significantly highest for Pauri (792 per cent) followed by Nainital (166 per cent) and Tehri Garhwal (93 per cent) and lowest for Almora (12 per cent) but this investment has been made largely in districts Nainital and Dehradun; though the share of total investment in district Nainital had increased from 37.18 per cent to 74.07 per cent while it has declined from 56.58 per cent to 18.95 per cent in district Dehradun during the reference period.

The value of industrial production has been increasing at the rate of 92.65 per cent per annum while the employment in industries has been showing very lower rate of growth of only 9.70 per cent during the last decades. It is further noted that the value of production has increased at highest level in district Nainital (457 per cent) with merely 17 per cent growth in employment, but the growth in employment has been highest in Pauri (23.97 per cent) with 74 per cent growth in the value of production. The lowest level of growth in production is, however, indicated for district Dehradun (32.50 per cent). On the whole district Nainital had the largest share in providing employment of 65 per cent labourforce in industrial sector in the region (Table 3).

A review of analysis based on "the distribution of industrial units according to their product groups revealed

that the industrial units which products are based on the locally available resources have been increased at great extent. The units engaged in the production of food and food related products, wooden products, non-metallic mineral products are the most important industrial categories among them. However, the industrial units which products were based on the raw material available outside uttarakhand are declining over the years. A major decline of 57 per cent has been recorded in the case of industrial units those were manufacturing electrical and non-electrical goods during 1979-80 and 1988-89. The largest growth of about seven-folds has been estimated for units which are engaged in the production of food and food related products. Industries using forest products as a base for producing different wooden goods have increased from 4 in 1979-80 to 26 in 1988-89. During this period, 9 woollen and cotton textile units comprising 5 units in Dehradun and 4 units in Nainital, and 7 paper and printing units in Nainital were newly established. The industrial units which were classified under the category of "others" by industry department are mainly involved in manufacturing and repairing of different kinds of machinery and transport goods. These industrial units showing an increasing trend of 149 per cent are mainly concentrated in the purely hilly and mountainous districts of the region.

The ownership pattern of existing industrial units in Uttarakhand revealed that significantly a larger proportion

of units (73 per cent) are established under the ownership of private concerns. And the industries owned by Government constitute to be around 21 per cent. But the number of industries formed by State/local Governments are observed significantly much higher than the industries established by Central Government. At the district level, it is pointed out that over one-third of the units in Pithoragarh and around 55 per cent units in Almora are established by the State Government while not even a single unit in Tehri Garhwal is formed by the Government. Comparing the proportions of different categories of industrial units established by Government in Uttarakhand and in rest of U.P., it is witnessed that the State Government have given a preferential treatment in the establishment of industries in favour of Uttarakhand over the establishment of units in remaining part of the state. Since the proportion of industries formed by Government at state level account for 7.11 per cent as against 21.28 per cent in Uttarakhand. Also the proportion of industries established under the joint ownership of public are found higher in latter area than the former one. However, the industries owned by private concerns are less in Uttarakhand (73 per cent) as compared at state level (91 per cent). This indicates the fact that the existing provisions of providing incentives and facilities in favour of industrial development in Uttarakhand are not influencing to increasing numbers of private entrepreneurs to establish industry in the region.

Table 4 : Product-wise Large Industrial Units

Districts	Food and food products	Textile (Woollen and cotton)	Wooden products and etc.)	Paper and (Railway sleepers etc.)	Petro-fertilizers	Electr. & lizers, elect-	Non-metals, chemi-	Repairs & etc., (engin-	Others (engin-	All product
<u>1979-80</u>										
Tehri Garhwal	-	-	-	-	-	-	-	-	6	6
Dehradun	3	-	4	-	11	37	7	5	30	97
Pauri	6	-	-	-	-	-	-	-	6	12
Almora	-	-	-	-	-	-	-	-	11	11
Nainital	16	-	-	-	-	-	-	7	25	48
Pithoragarh	-	-	-	-	-	-	-	-	3	3
Total	25 (14.12)	-	4 (2.25)	-	11 (6.21)	37 (20.90)	7 (3.95)	12 (6.78)	81 (45.76)	177 (100.00)
<u>1988-89</u>										
Tehri Garhwal	-	-	-	-	-	-	-	-	14	14
Dehradun	14	5	5	-	27	5	18	9	54	137
Pauri	-	-	-	-	3	-	-	-	10	13
Almora	-	-	-	-	3	-	-	-	9	12
Nainital	148	4	11	7	27	11	10	3	44	265
Pithoragarh	-	-	-	-	-	-	-	-	-	-
Total	162 (36.73)	9 (2.04)	16 (5.90)	7 (1.59)	60 (13.60)	16 (3.63)	28 (6.35)	12 (2.72)	131 (29.76)	441 (100.00)

Note : Figures of Chamoli and Pithoragarh are clubbed with Pauri and Almora respectively, and there was no factory in Uttar Kashi.

Source : Annual Survey of Industries, U.P. State Planning Institute, Lucknow.

28288

SMALL SCALE INDUSTRIAL UNITS

The small scale units functioning in Uttarakhand are mainly based on the locally available raw material and most units are observed using indigenous mode of production technology which was locally developed during the past several generation ago. Such category of industrial units are involved in the production of khadi and related products, handicraft products which are basically based on forest and mining products, food products, handloom and some miscellaneous products. The data for 1991-92 indicates a total number of 33.32 thousand units existing in the region, of which 45 per cent are khadi and khadi related, 18 per cent handicrafts, 9 per cent handloom fabrics and 10 per cent food products. The concentration of small units was revealed at highest level in district Nainital (43.43 per cent) followed by Almora (12.99 per cent) and equal numbers of around 9 per cent each in Uttar Kashi, Pauri and Dehradun while only 1.37 per cent units were located in district Tehri Garhwal (Table 5). Domination of khadi and related industrial units is indicated in all the districts of Uttarakhand, though is significantly at highest level in Dehradun (83 per cent) followed by 58.09 per cent in Pithoragarh, 55.69 per cent in Uttar Kashi and at lowest level in district Tehri Garhwal (23.46 per cent). The second most dominant industrial activity is the manufacture of handicraft products, constituting largest proportion in district Pauri (53.50 per cent) followed by 22.77 per cent in Nainital and lowest proportion of 1.67 per cent in Dehradun.

Table 5 : Industrial Units by Production Category (in 1991-92)

District	Khadi & other Engin- ering related units	Chem- ical	Hand- icrafts	Handi- loom	Silk	Food proce- ssing	Others	Total	
Almora	1578 (36.45)	434 (10.03)	100 (2.31)	566 (13.07)	340 (7.85)	196 (4.53)	1115 (25.76)	196 (4.53)	4329 (12.99)
Nainital	5753 (39.75)	945 (6.53)	337 (2.33)	1590 (10.99)	3295 (22.77)	-	1365 (5.43)	1187 (8.20)	14472 (43.43)
Pithoragarh	1371 (58.09)	56 (2.37)	11 (0.47)	109 (4.62)	117 (4.96)	-	404 (17.12)	292 (12.37)	2360 (7.08)
Uttar Kashi	1658 (55.09)	180 (6.05)	13 (0.44)	169 (5.68)	265 (8.90)	50 (1.68)	127 (4.27)	515 (17.30)	2746 (8.93)
Chamoli	1122 (40.86)	79 (2.88)	8 (0.29)	383 (13.95)	138 (5.03)	5 (0.18)	369 (13.44)	642 (23.38)	2746 (8.24)
Tehri	107 (23.46)	31 (6.80)	9 (1.97)	6 (1.32)	22 (4.8E)	-	-	281 (61.62)	456 (1.37)
Dehradun	2433 (82.78)	26 (0.88)	-	17 (0.58)	49 (1.67)	-	-	414 (14.09)	2939 (8.81)
Pauri	846 (27.77)	394 (12.93)	46 (1.51)	-	1630 (53.50)	6 (0.20)	-	125 (4.10)	3047 (9.14)
Uttarakhand	14868 (44.61)	2145 (6.44)	524 (1.57)	2840 (8.52)	5856 (17.57)	61 (0.18)	3380 (10.40)	3652 (10.96)	33326 (100.0)

Note : Figures in brackets indicate the percentage of column totals.

Source : Statistical Diary, Parvatiya Shetra, U.P., State planning
Institute, Lucknow.

The trend of growth in the number of different industrial units during the period 1988-89 and 1991-92 revealed that industrial units which are engaged in the production of handloom articles are increasing to a large extent, indicating the annual growth rate of 66.14 per cent as against the overall growth of 27.25 per cent of all small scale units in the region. The growth of khadi and related units is estimated to be 42.79 per cent per annum. However, the proportion of handicraft units in the total existing small scale units has declined from 25.59 per cent in 1988-89 to 17.57 per cent in 1991-92, but the proportion of khadi and related units has increased from 35.70 per cent to 44.61 per cent during the same period of time. The lowest level of growth has been observed in the development of units which are engaged in the production of silk products (5.50 per cent) and chemical units (7.03 per cent) during 1988-89 and 1991-92 (Table 6). On the other the proportion of remaining categories of industrial units in the total existing units has considerably declined over the years.

HOUSEHOLD INDUSTRIES

The data related to the number of existing household industries, pattern of investment, production and employment structure for the years 1989-90 and 1993-94 has been obtained from the official documents of the industry department.

Table 6 : Small Scale Industries by Product Groups

Industry	1988-89	1991-92	Per Cent Growth	
			1988-89-	Annual 1991-92
Khadi and related > Units	5483(35.70)	14868(44.61)	171.17	42.79
Engineering	1024(6.67)	2145(6.44)	109.47	27.37
Chemicals	409(2.66)	524(1.57)	28.12	7.03
Food Processing	2148(13.99)	3380(10.14)	57.36	13.34
Handlooms	779(5.09)	2840(8.52)	264.57	66.14
Handicrafts	3930(25.59)	5856(17.57)	49.01	12.25
Silk	50(0.33)	61(0.18)	22.00	5.50
Others	1534(9.99)	362(10.96)	138.01	34.52
Total	15357(100.0)	33326(100.0)	117.01	29.25

Note : Figures in bracket indicate the proportion of total industrial units.

Source : Statistical Diary, Parvatilya Shetra, State Planning Institute, Lucknow, U.P., 1991 and 1995.

Distribution of household industries is found to be more evenly distributed among the districts in the region. Of the total number of 24416 units a fairly larger number of them are located in district Almora (22.76 per cent) and lowest proportion of 8.26 per cent in Uttar Kashi. Remote and mountainous districts like Chamoli (11 per cent) and Pithoragarh (12 per cent) also had good number of such

Table 7 : Household Industries

(in Million Rs.)

Districts	1989-90				1993-94				Per Cent Growth			
	No. of Inves- tment Units	Produ- ction yment	Emplo- yment Units	No. of Inves- tment Units	Produ- ction yment	Emplo- yment Units	No. of Inves- tment Units	Produ- ction yment	Emplo- yment Units	Per Cent Growth		
Dehradun	3064	30.6	122.4	6128	3456	31.5	124.1	6677	12.79	2.94	1.39	8.96
	(15.61)	(15.60)	(15.76)	(15.82)	(14.45)	(13.99)	(15.44)	(15.27)				
Pauri	1036	10.4	41.6	2072	2027	19.7	57.5	3063	95.66	89.42	38.22	47.83
	(5.28)	(5.30)	(5.36)	(5.35)	(8.31)	(8.75)	(7.16)	(7.00)				
Tehri	1210	12.1	48.4	2410	1597	14.3	49.2	2797	31.98	18.18	1.65	16.06
	(6.17)	(6.17)	(6.23)	(6.22)	(6.54)	(6.35)	(6.12)	(6.40)				
Chamoli	1973	19.1	78.8	3946	2379	24.2	79.5	4352	20.58	26.70	0.89	10.29
	(10.05)	(9.73)	(10.14)	(10.19)	(9.74)	(10.75)	(9.89)	(9.75)				
Uttar Kashi	1627	16.3	65.2	3254	2017	18.0	66.1	3684	23.97	10.43	1.38	13.21
	(8.29)	(8.31)	(9.39)	(8.40)	(8.26)	(8.00)	(8.23)	(8.43)				
Nainital	3781	37.8	151.2	7562	4412	42.8	155.6	8193	16.69	13.23	2.91	8.34
	(19.27)	(19.27)	(19.46)	(19.52)	(18.02)	(19.01)	(19.36)	(18.74)				
Almora	4437	44.4	177.6	8874	5556	48.1	179.6	9993	25.22	8.33	1.13	12.60
	(22.61)	(22.61)	(22.86)	(22.91)	(22.76)	(21.37)	(22.35)	(22.85)				
Pithoragarh	2495	24.9	91.6	4490	2972	26.5	92.0	4967	19.12	6.43	0.44	10.62
	(12.71)	(12.69)	(11.79)	(11.59)	(12.17)	(11.77)	(11.45)	(11.36)				
Uttarakhand	19623	196.2	776.8	39736	24416	225.1	803.6	43726	24.43	14.73	3.45	12.88
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)				

Source : Industrial Development in U.P., Progress Report, Directorate of Industries, Kanpur, U.P., 1991 and 1996.

industries. With the investment of merely Rs.225.1 million the household industries are employing 43726 workers and producing various commodities and goods valued at Rs.803.6 million. Across the districts, the value of production and employment in these industries are quite positively related with the level and rate of investment. All districts are showing almost similar trends in the share of the value of investment and production and in providing employment. The share in amount of investment of such industries in the region varied lowest from 6.35 per cent for Tehri to highest at 21.37 per cent for Almora. The lowest percentage share in production and employment accounts for 6.12 per cent and 6.40 per cent respectively again for Tehri as against highest for Almora at 22.35 per cent and 22.85 per cent respectively.

Growth in household industries, though significant, has been slower than growth in large and small scale industries. Their number has doubled over the period 1989-90 to 1993-94, but investment, output and employment have been slowed. Similarly, the growth of household industries has been relatively faster in the purely hilly districts of Pauri, Chamoli, Tehri, Uttar Kashi, Almora and Pithoragarh than in Nainital and Dehradun. The household industries have increased at the rate of 4.69 per cent while the growth of investment is registered at 2.95 per cent as against only 0.69 per cent growth in production, annually during 1989-90 and 1993-94. The employment opportunities have increased 2.58 per cent annually. It is further observed that the

expansion of household industries has occurred relatively at highest levels in Pauri, the consequences has shown largest growth in the capital investment, value of output and employment. However, lowest level of growth in the expansion of industrial units at household level and employment opportunities has been indicated in the case of district Dehradun (12.79 per cent) followed by Nainital (16.69 per cent) (Table 7).

CONCLUSIONS

The importance of developing industrial economy has not only been recognised in terms of its potentiality in widening employment opportunities and increasing the possibility of income levels of population but the process of industrialisation equally leads the diversification and expansion of various economic activities, including the informal sector economies, in a wider context, which further increases the avenues of employment and income. However, the manufacturing sector has been observed playing very little role in providing employment opportunities to the labourforce and contributing a very small amount of income in the region due to poorly development of industrial activities in Uttarakhand. Large industrial units of the region are mainly concentrated in plain areas of Nainital and Dehradun.

The small scale and household industrial units are, however, more or less, evenly distributed in all purely hilly

and mountainous districts. These units are basically based on locally available raw materials and, even most household industries are using traditional, indigenous mode of production technology which was locally developed by their households during past several generations ago. Prominent among these industrial units are the khadi and related manufacturing activities and handicraft units. In the high mountain areas the khadi manufacturing activity in the form of spinning and weaving of woollen yarns and the production of various woollen products is quite popular and contributing a significant amount of income for the households who are engaged on it. This activity was initiated and developed by scheduled tribes in bordering areas of districts Dehradun, Pithoragarh, Chamoli and Uttar Kashi. The required raw wool for the production of woollen products was obtained from their own sheeps and goats. However, during recent past this activity has been adopted by other groups of population living in middle mountain areas of the region and gaining increasing importance in terms of providing gainful employment opportunities to the labourforce. With the development of khadi activities the woollen based handicraft activities are also been observed increasingly expanding in various areas of the region. In all the growth of small scale and household industries has been significantly much larger in purely hill districts as compared to districts Nainital and Dehradun, while the large industrial units are expanding at larger scale in Nainital and Dehradun than in purely hilly districts over the years.

Lack of infrastructural facilities and limited access to markets have been the main factors responsible for private entrepreneur's indifference about establishing larger industrial enterprises in the region, particularly in purely hilly and mountainous areas of Uttarakhand. Similarly, lack of managerial ability and risk bearing capacities among local people have resulted the poor development of industrial economy, even in the case of small enterprises. Certain incentives and benefits may also be essential to off-set the locational disadvantages of the region, but such incentives and disincentives should preferably be used to encourage environmentally friendly industries and discourage environmentally damaging industries. Regulation and control over the latter category are also necessary.

Incentives and benefits notwithstanding, it should be recognised that the best chances for the survival and growth of industry in Uttarakhand will be for those engaged in product lines which fall within the region's comparative advantages. Industrial units based on local raw material, such as forest products, medicinal plants, fruits, vegetables and animal produce, are example. Other comparative advantages in favour of Uttarakhand are the climate and pollution-free atmosphere which are suitable for the establishment of sophisticated electronic and precision instrument industries. In the past, initiatives for establishing electronic units in the region were made by the Hill Electronic Corporation Ltd. (HILTRON) in 1985. Later,

other industrial units, such as Hindustan Photo Films, HMT and others were also established in the region.

The possibility of establishing electronic belts or complexes in different areas, instead of starting one unit here and another there, would be a more effective approach. Various household-based cottage industries have been in the region for a few generations. Large numbers and categories of these traditional units have been closed due to the scarcity of raw materials, marketing problems, changing pattern in consumer's preferences, and the availability of similar products of better quality from the plains. Improvements in the existing household enterprises producing goods with positive elasticity of demand could be affected through arrangement for supply of raw materials, technology development support and marketing. These products include carpentry, forges, oil processing, mat making, woollen textiles, ringal and copper articles and handicrafts.

REFERENCES

Joshi, A. and Mehta, G.S., Pattern of Industrialisation and Industrial Performance in Uttarakhand : A Preliminary Note, Working Paper No.116, Giri Institute of Development Studies, Lucknow, 1992.

Joshi, B.K., Impact of Industrialisation on the Social Ecology of Hill Areas of U.P., GIDS, Lucknow, 1987.

Joshi, B.K. and Mehta, G.S., Situation of Wool and Wool Related Activities in Uttarakhand, GIDS, Lucknow, 1995.

Mehta, G.S., Condition of Rural Artisans in U.P. (A Study of Two Selected Villages in Kumaun Hills), WP No.58, GIDS, Lucknow, 1981.

Mehta, G.S., Employment Potentials in Handicraft Activities, Manpower Journal, Vol.XXXIII, No.2, July-September, 1997.

Mehta, G.S., Constraints in the Development of Uttarakhand, WP No.126, GIDS, Lucknow, 1995.

Mehta, G.S., Industry, Service and Business Programme (ISB) in District Almora of U.P., PC Pandey (ed.), Rural Development in India : Issues and Policies, Anmol Publications, 1990.

Mehta, G.S., Small Scale Enterprises in Rural Economy, Jalal, R.S. (ed.), Role of Small Scale Sector in India's Economy, Himalaya Publishing House, 1992.

Mehta, G.S., Socio-Economic Aspects of Migration, Deep and Deep Publications, New Delhi, 1991.

Mehta, G.S., Uttarakhand : Prospects of Development, Indus Publishing Co., New Delhi, 1996.

Mehta, G.S., Development Experiences and Options in a Hill Region : The Case of Uttarakhand, Series No.MEI 97/4, ICIMOD, Kathmandu, Nepal, 1997.

Papola, T.S., Woollen Carpet Industry in Garhwal and Kumaun Hills, GIDS, Lucknow, 1980.

Papola, T.S., Planning for Environment and Economic Development in Mountain Areas, Concepts, Issues and Approaches, MEI 96/2, ICIMOD, Kathmandu, Nepal, 1996.